Input impedance of the circcumferential slot antenna on a sectoral cylindrical cavity excited by a probe

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Abstract

The circumferential slot antenna on a sectoral cylindrical cavity excited by a probe is studied theoretically and experimentally. The integral equations can be formulated by applying the equivalent principle together with the boundary conditions at the slot and the probe. The dyadic Green's function and the moment method are used to solve for the unknown currents in the integral equations. The input impedance of the antenna has been computed numerically and measured by the experiment. The effects of the probe length, of the slot length, and of the cavity size on the input impedance are studied; those have good agreement between theory and experiment.

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